Proceedings of 2018 IEEE East-West Design and Test Symposium, EWDTS 2018, 2018

Designing the Symmetrical Eight-Tooth-Shaped Microstrip Antenna for Wi-Fi Applications

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Abstract

© 2018 IEEE. The problem of designing a symmetrical eight-tooth-shaped microstrip dual-band Wi-Fi antenna (2.4 GHz and 5 GHz) is considered. At the first stage of antenna design, numerical experiments are performed to determine the dependence of values of the first two resonance frequencies of the antenna and the corresponding bandwidths on the geometric parameters of the radiator. A regression analysis is carried out and regression models for resonance frequencies are obtained. The absolute and relative errors for the models are calculated. A family of Wi-Fi dual-band antennas with a certain ratio of length to depth of rectangular cutouts of the radiator is selected by analyzing the models. Further analysis of the matching and of the bandwidth for the antennas from the obtained family allows determining the best matched Wi-Fi antennas.

http://dx.doi.org/10.1109/EWDTS.2018.8524698

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